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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/660,379	09/11/2003	David J. Schroeder	100191	6019

29050 7590 06/12/2007
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EXAMINER

GOUDREAU, GEORGE A

ART UNIT	PAPER NUMBER
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1763

MAIL DATE	DELIVERY MODE
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06/12/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/660,379	Applicant(s) SCHROEDER ET AL.	
	Examiner George A. Goudreau	Art Unit 1763	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on (3-21-07' to 4-28-07').
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

George A. Goudreau
GEORGE GOUDREAU
PRIMARY EXAMINER
6-071

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over the reference as applied in paragraph 5 of the previous office action.
4. Applicant's arguments filed 3-21-07' have been fully considered but they are not persuasive.

Applicant argue the following points regarding the examiner's rejection of their claimed subject matter.

-Applicant's claimed invention is not obvious over the prior art, which was previously used to reject applicant's claims based upon applicant's discovery of unexpected polishing results, which are associated with the specific usage of particular species of cations (i.e.-Ca, Ba, or Sr) at particular concentrations in the

cmp slurry in terms of the rate of removal of Ta from a wafer. Applicant further argues that it would not have been obvious to select the particular species of cations, which are recited by the applicant in the particular quantities, which are specified, by the applicant in the prior art, which is used to reject applicant's claims based.

The examiner must disagree.

-Applicant has not presented a sufficient amount of data to establish that they have unexpected results which are associated with the usage of particular species of cations (i.e.-Ca, Ba, Sr) at particular concentrations in their cmp slurry. In order to gain benefit of a claim of unexpected results, applicant needs to present sufficient data to establish a showing of unexpected results for each of Ca, Ba, and Sr relative to the other cations recited in the prior art, which is used to reject applicant's claims. The data should include points both inside, and outside the region (i.e.-cation concentration) where unexpected results occurs in order to establish what the limits (i.e.-boundaries) of the unexpected results are. Further, the rate of removal of the Ta layer seems to vary depending upon both the particular type of cation, which is included in the cmp slurry as well as what the concentration of that particular cation in the cmp slurry is. (i.e.-The examiner has included a graph of the variation in the Ta removal rate versus the Ca ion concentration in applicant's cmp slurry to illustrate this point.) Thus, a comparison of the rate of removal of Ta with cmp slurries which contain the same molar concentrations of different species of cations needs to be presented so

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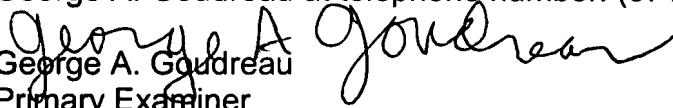
that the examiner can adequately determine if applicant has truly discovered unexpected results based upon the usage of particular species of cations as is purported by the applicant.

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

6. Any inquiry concerning this communication should be directed to examiner

George A. Goudreau at telephone number. (571)-272-1434.


George A. Goudreau
Primary Examiner
Art Unit 1763

Effect of Ca Ion Concentration On Ta Removal Rate (Ang. per min.)

